





# **Training Simulations Replacement the M&S Way Ahead**

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# PURPOSE



**To present to the AMSEC members the Army training simulations replacement strategy and justification.**



# BACKGROUND

- Trainers are not tied to the past. Simulations have changed rapidly and over time; the only loyalty is to 'what enables relevant training'
  - **CBS 1996: Cold War models/behaviors; ALSP; hex-based terrain/movement; keyboard inputs**
  - **CBS 2005: COE models/behaviors; C4I stim; 'Gunfighter'; 'FLUD'; federation (JCATS, TACSIM, LOGFED, others); polygonal terrain; 'mini-step' movement; graphical inputs**
  - **BBS 1996: Cold War models/behaviors; stand-alone**
  - **BBS 2005: COE models/behaviors; C4I stim; distributed gaming; federation (BICM, UAV)**
  - Janus - became UCCATS - became JCATS
  - Spectrum simulation is being 'reused'; Regional Analysis Model is core of current Proof of Principle effort to solidify concept and prototype for Joint



# WARSIM

...does it all  
*1995*

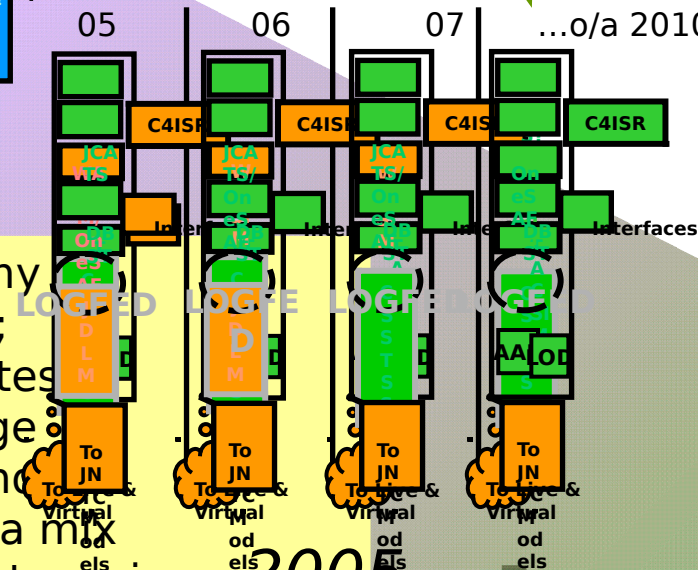
The diagram illustrates the JSIMS Core as a central hub (purple octagon) connected to several military branches and agencies (colored squares) via arrows. The branches and agencies shown are:

- Army** (Green square, top right): Features a tank icon.
- Marines** (Orange square, middle left): Features a Marine icon.
- NAVY** (Blue square, bottom right): Features a ship icon.
- AF** (Blue square, top left): Features a fighter jet icon.
- NSA** (Pink square, middle right): Features an airplane icon.
- DOIA** (Blue square, bottom left): Features a globe icon.
- NRO** (Orange square, bottom center): Features a satellite icon.

Arrows indicate the flow of information from the JSIMS Core to these branches and agencies. The year **1997** is displayed at the bottom of the diagram.

## 'Objective' System

US' demise caused Army to review sims' capability; conclusion was that smarter way ahead was to leverage improved current sims, and bring on new sims to use a mix of 'old' and 'new' that best services the COE and Modular Army training needs





# **SIMULATION REPLACEMENT STRATEGY**



**Decisions regarding when to replace current simulation Systems will be 'Event-Driven' decisions; the incoming simulation must demonstrate capabilities that:**

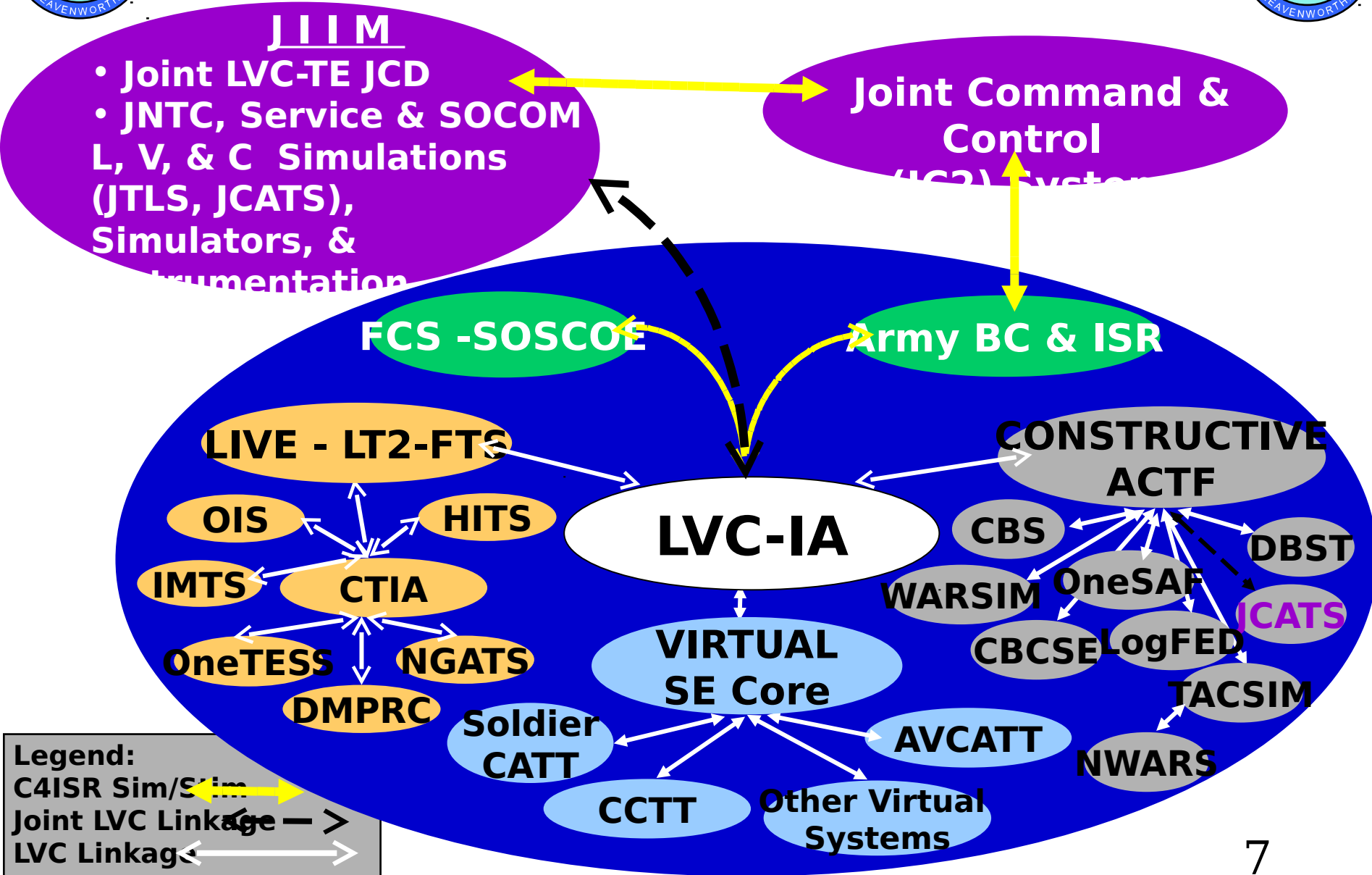
**1) provide at least the same training capabilities as the simulation that it will replace, and**

**2) offer an improved training benefit that justifies the effort and resources to be expended to bring about the successful transition to a new simulation tool, and**

**3) are part of a logical 'toolkit' (LVC-IA/ACTF) that services the full breadth and depth of Army training needs.**



# LVC OPERATIONAL VIEW





# LVC IA Required Capabilities

## Integrating Architecture

-  **Backward Interoperable**
-  **Common and Reusable Software**
-  **Communications Standards and Protocols**
-  **Correlate/Dynamic Synthetic Natural Environment**
-  **Distributed Data Repositories**
-  **Open Systems**
-  **Standard Data Management**
-  **Security**

## Operational System Stimulation

-  **Expanded Battlespace**
-  **Interact with Embedded Training Systems**
-  **Stimulate/Interact with BCS**

## Plug and Train

-  **Performance Data Collection and AAR**
-  **Exercise Preparation and Control**
-  **Reach On Demand**
-  **Support a Collaborative Environment**
-  **Update Training Support System Produ**

## Sustainment

-  **Fault Monitoring and Correction**
-  **Maintainability**
-  **Reliability**
-  **Supportability**

- **Joint links to Service & SOCOM systems are embedded in the requirements above**
- **LVC-IA provides enabling linkages and common interfaces**

**ICD STATUS: AROC Approved 7 October 2004**

**Jt Tng FCB Approved 2 May 2005**

**JCB Approved 25 May 2005**

**JROC Approval - currently at final Paper JROC approval/ awaiting G-3 signature; estimate final approval and signature by end of June 2005.**





# USE CASE DEFINITION



Defined As: *Description of a training event in terms of the training audience, training objectives, training support requirements (Example: response cells) and Live-Virtual-Constructive components.*



# CURRENT USE CASES- CURRENT, MID TERM, AND ANTICIPATED MODELS

USE CASE	CURRENT MODELS	MID TERM MODELS	ANTICIPATED MODELS
Multi Level Contingency Exercise	ACTFV2.0 MRF (CBS, JCATS entities 5,100)	ACTFV3.0 MRF (CBS, JCATS entities 5,100)	ACTF V4.0 MRF (CBS, WARSIM, JCATS, OneSAF)
Theatre Level Strategic Deployment Ex	ACTF V2.0 MRF (CBS w/ 15,000 icons)	ACTF V3.0 MRF (CBS w/ 15,000 icons)	ACTF V4.0 MRF (CBS, WARSIM)
Joint Interoperability Exercise	ACTF V2.0 MRF(JCATS, AWSIM, ADSI, CBS)	ACTF V3.0 MRF(JCATS, AWSIM, ADSI, CBS)	ACTF V4.0 MRF (JCATS, OneSAF, AWSIM, ADSI, CBS, WARSIM)
Multi Level JIMM CPX	ACTF V2.0 MRF(JCATS, AWSIM, ADSI, CBS)	ACTF V3.0 MRF(JCATS, AWSIM, ADSI, CBS)	ACTF V4.0 MRF(JCATS, OneSAF, AWSIM, ADSI, CBS, WARSIM)
Corps MRX	ACTF V2.0 MRF (CBS, CSSTSS, TACSIM)	ACTF V3.0 MRF (CBS, LogFED, TACSIM, WARSIM (Intel))	ACTF V4.0 MRF (CBS, WARSIM, LogFED)
Corps Embedded WFX with a HIUC spike	ACTF V2.0 MRF (CBS, CSSTSS, TACSIM)	ACTF V3.0 MRF (CBS, LogFED, TACSIM, WARSIM (Intel))	ACTF V4.0 MRF (CBS, WARSIM, LogFED)
Corps Emb WFX in asymmetric environment	ACTF V2.0 MRF (CBS, CSSTSS, TACSIM)	ACTF V3.0 MRF (CBS, LogFED, JCATS, TACSIM, WARSIM (Intel))	ACTF V4.0 MRF (CBS, WARSIM, LogFED, JCATS, OneSAF)
Division CPX	ACTF V2.0 MRF (CBS w/ 8,000 icons, TACSIM)	ACTF V3.0 (CBS w/ 8,000 icons, TACSIM, WARSIM (Intel))	ACTF V4.0 (CBS, WARSIM)
Division WFX	ACTF V2.0 MRF (CBS w/ 8,000 icons, TACSIM)	ACTF V3.0 (CBS w/ 8,000 icons, TACSIM, WARSIM (Intel))	ACTF V4.0 (CBS, WARSIM)
Battalion CPX	ACTF V2.0 ERF (JCATS), BBS	ACTF V3.0 ERF (BBS, JCATS)	ACTF V4.0 ERF (BBS, JCATS)
Heavy Brigade CTC Rotation	ACTF V2.0 ERF (JCATS), NTC Inst, , BBS, JANUS	ACTF V3.0 ERF (JCATS), NTC Inst, , BBS	ACTF V4.0 ERF, (JCATS, OneSAF), NTC Inst, BBS, OneSAF
BCT MRX (BCBST)	ACTF V2.0 ERF (JCATS) , BBS, JANUS	ACTF V3.0 ERF (JCATS) , BBS	ACTF V4.0 ERF (JCATS, OneSAF), BBS, OneSAF
BCT (Light, Heavy, Stryker)	ACTF V2.0 ERF (JCATS) , BBS, JANUS	ACTF V3.0 ERF (JCATS) , BBS	ACTF V4.0 ERF (JCATS, OneSAF), BBS, OneSAF
Bde WFX	ACTF V2.0 ERF (JCATS) , BBS, JANUS	ACTF V3.0 ERF (JCATS) , BBS	ACTF V4.0 ERF (JCATS, OneSAF), BBS, OneSAF

V4.0 or beyond



# CURRENT USE CASES- CURRENT, MID TERM, AND ANTICIPATED MODELS

V4.0 or beyond

USE CASE	CURRENT MODELS	MID TERM MODELS	ANTICIPATED MODELS
<b>INSTITUTIONS USE CASES</b>			
CGSC Logistics Exercise	JDLM	JDLM, MiISIM	JDLM, MiISIM, WARSIM
CGSC Block 2 Digital Division Exercise	DBST and DA with JCOTS ISM	MiISIM, ISM	MiISIM, WARSIM, ISM
SCP Tactical Comds Dev Cse	JANUS	JCATS, MiISIM, ISM	JCATS, MiISIM, OneSAF, ISM
CGSC Block 3 Bde Ex	TACOPS/DBST/ISM	MiISIM, ISM	MiISIM, OneSAF, ISM
Fort Eustis Logistics Exercise	ACTF V2.0 MRF (JDLM, CBS w/ 3,000 icons).	ACTF V3.0 MRF (JDLM, LogFED, CBS w/ 3,000 icons).	ACTF V4.0 MRF (LogFED, CBS, WARSIM).
USASMA Battlestaff CPX	ACTF V2.0 ERF (JCATS), BBS, ISM	ACTF V3.0 ERF (JCATS), BBS, ISM	ACTF V4.0 ERF (JCATS, OneSAF), BBS, OneSAF, ISM
7 <sup>th</sup> ATC BNOC Leader Development Course	ACTF V2.0 ERF (JCAT/SIMPLE)	ACTF V3.0 ERF (JCAT/SIMPLE), ISM	ACTF V4.0 ERF (JCAT/SIMPLE, OneSAF), ISM
Armor C3 - Gauntlet Exercise	ACTF V2.0 ERF (JCATS/SIMPLE. Icon 1200)	ACTF V3.0 ERF (JCATS/SIMPLE. Icon 1200), ISM	ACTF V4.0 ERF (JCATS/SIMPLE. Icon , OneSAF1200), ISM
MANSCEN Warfighter III	JANUS	JCATS, ISM	JCATS, OneSAF, ISM



# FUTURE USE CASES- CURRENT, MID TERM, AND ANTICIPATED MODELS

USE CASE	CURRENT MODELS	MID TERM MODELS	ANTICIPATED MODELS
UEy CPX	ACTF V2.0 MRF (CBS, JCATS, LOGFed, TACSIM)	ACTF V3.0 MRF (CBS, JCATS, LOGFed, TACSIM, WARSIM (Intel))	ACTF V4.0 MRF (CBS, WARSIM, JCATS, OneSAF, LOGFed)
UEx WFX			
UEx CPX			
BCT CPX (Heavy, Light, Stryker)	ACTF V2.0 ERF (JCATS, TACSIM, BICM), BBS	ACTF V3.0 ERF (JCATS, TACSIM, BICM), BBS	ACTF V4.0 ERF (JCATS, OneSAF)
Maneuver Enhancement Bde CPX	ACTF V2.0 MRF (JCATS, CBS, TACSIM)	ACTF V3.0 MRF (JCATS, CBS, TACSIM, WARSIM (Intel))	ACTF V4.0 MRF (JCATS, OneSAF, CBS, WARSIM)
Fires Bde CPX	ACTF V2.0 MRF (JCATS, CBS, TACSIM)	ACTF V3.0 MRF (JCATS, CBS, TACSIM, WARSIM (Intel), FireSIM)	ACTF V4.0 MRF (JCATS, OneSAF, CBS, WARSIM)
Aviation Bde CPX	ACTF V2.0 MRF (JCATS, CBS), AVCATT-A	ACTF V3.0 MRF (JCATS, CBS), AVCATT-A	ACTF V4.0 MRF (JCATS, OneSAF, CBS, WARSIM), AVCATT-A
Battlefield Surv Bde CPX	ACTF V2.0 MRF (JCATS, CBS, TACSIM)	ACTF V3.0 MRF (JCATS, CBS, TACSIM, WARSIM (Intel))	ACTF V4.0 MRF (JCATS, OneSAF, CBS, WARSIM)
Sustainment Bde CPX	ACTF V2.0 MRF (CBS, JCATS, BICM, LogFED, TACSIM)	ACTF V3.0 MRF (CBS, JCATS, BICM, LogFED, TACSIM, WARSIM (Intel))	ACTF V4.0 MRF (CBS, WARSIM, JCATS, OneSAF)

V4.0 or beyond



# MODULAR ARMY ANNUAL TRG REQUIREMENTS - FORSCOM DRAFT GUIDANCE

UNIT TYPE	Bn CPX	CPX	BCTP WFX	BCTP MRX 2 <sup>ND</sup> /3 <sup>RD</sup> YR ONLY
Army training strategy will determine actual OPTEMPO				
UE <sub>y</sub> /UE <sub>x</sub>	NA	1 (UE <sub>x</sub> Only)	1	
HV BCT	5	3	TBD	1
LT BCT	10	3	TBD	1
S BCT	6	3	TBD*	1
FIRES BDE	3	3	1	1
BFSB	1	3	1	1
SUST BDE	3	3	1	1
AVN BDE	8	4	1	1
ME BDE	4	3	1	1

\* Currently there are two BCTP WFX planned in Sep and Dec 05 for the S BCT

Army training doctrine says that the Commander will determine the appropriate support tools for his training



## WHERE WE ARE



- WARSIM and OneSAF are in development.
- Once operationally evaluated/validated as meeting the strategic guidelines for simulation replacement described earlier, Army will enthusiastically adopt them.
- Predict FY 2010 at earliest for full replacement of current simulation capabilities; will need to reevaluate prediction as capabilities mature.



# WHERE WE ARE - OneSAF SPECIFICS

TEMO has completed a User Assessment of OneSAF, Block D, 'Build 24', 13 June - 08 July 2005.

- Functionality Assessed: Selected capabilities required to replace BBS, Janus, and JCATS MOUT
- Results:

TOTAL THREADS	DEMONSTRATED	NOT DEMONSTRATED	TOTAL PTR'S
167	19 (11%)	148 (89%)	507*

## PTR Priority Breakdown \*

- **P1 - 08** (The problem crashes the system and must be fixed immediately.)
- **P2 - 314** (The problem causes a training task not to be trained or trained incorrectly.)
- **P3 - 96** (The problem causes a training task to be trained incorrectly but there is a work around.)

- **P4 - 89** (The problem is a nuisance but does not impact training.)

\* **Does not include Deter, Duplicate, or Close-out PTRs (total 134)**

Acronyms:	
BBS	- Brigade/Battalion Battle Simulation
JCATS	- Joint Conflict and Tactical Simulation
MOUT	- Military Operations on Urban Terrain
PTR	- Problem/Trouble Report
TEMO	- Training, Exercises, and Military Operations